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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/474,536	12/29/1999	QINGYU ZENG	24707A	2359

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EXAMINER
TORRES VELAZQUEZ, NORCA LIZ

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/474,536	ZENG ET AL.	
	Examiner	Art Unit	
	Norca L. Torres-Velazquez	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11,15-18 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11,15-18 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. Applicant's arguments see page 7 of remarks, filed November 14, 2003, with respect to claims 11 and 20 have been fully considered and are persuasive. The 35 U.S.C. 102(b) of claims 11 and 20 has been withdrawn. The SWAN et al. reference fails to explicitly teach that the primary fibers of the web are polyethylene terephthalate fibers and that the bi-component binder fibers include a core of polyethylene terephthalate and a sheath of polyethylene terephthalate. The primary fibers of the web of SWAN et al. are polypropylene.

2. Applicant's arguments filed November 14, 2003 with regards to claim 1 have been fully considered but they are not persuasive.

a. Applicants argue that Swan et al. reference is related to a web of melt-blown polypropylene rather than a web or blanket of primary fibers and bi-components polymer binder fibers. Further, Applicants argue that the Swan et al. patent does not expressly mention of providing a blanket including bi-component fibers comprising a binder component with a softening point lower than the softening point of the principal component.

The Examiner does not agree with Applicant's interpretation of the SWAN et al. reference. It is noted that the web of SWAN et al. is not limited to just a web of melt-blown polypropylene, the reference also teaches the use of binder fibers that include bicomponent binder fibers which have an adhesive component and a supporting component arranged in a coextensive side-by-side, concentric sheath-core or elliptical sheath-core configuration. The Examiner equates the adhesive component of the

bicomponent binder fibers to the binder component polymer component of the present invention and the supporting component of the bicomponent binder fibers to the principal polymer component of the present invention. The melt-blown polypropylene fibers of SWAN et al. are equated to the primary fibers of the present invention. With regards to the binder component with a softening point lower than the softening of the principal component, it is noted that SWAN et al. teaches the use of a binder fiber with a sheath-core structure having a core of crystalline polyethylene terephthalate surrounded by a sheath of an adhesive polymer formed from isophthalate and terephthalate esters. (Column 4, lines 53-56) It is well known that crystalline polymers have a higher melting point than adhesive components in a bicomponent fiber. By having a difference in melting point (or softening point) this type of bicomponent fibers can be used as binder or bonding fibers, therefore the difference in softening point is inherent to the bicomponent binder fibers taught by SWAN et al. This is further evidenced by CAREY, Jr. et al. (US 4,837,067) cited by the SWAN et al. on Column 4, lines 49-51. CAREY, Jr. et al. explicitly says that the adhesive component of thermally bonding fibers must be thermally activatable (i.e. meltable) at a temperature below the melt temperature of the structural fibers of a batt. CAREY, Jr. et al. also teaches the use of bicomponent bonding fibers with structures such as a sheath-core. (Column 4, lines 27-42) Therefore, the rejection of claim 1 under 35 U.S.C. 102(b) over SWAN et al. is maintained.

b. With regards to arguments regarding claim 15, it is noted that the SWAN et al. reference does provide the structure of a "blanket" including primary fibers and bi-component fibers as stated above.

c. With regards to arguments regarding claims 11 and 20, refer to new rejection in this office action.

d. With regards to claim 4, Applicants argue that the claim explicitly provides that the flange has a thickness of less than about 15% of the thickness of the blanket. Further, Applicants state that the "web" is only part of the "blanket" 10 of the structure of SWAN, and that nothing express or inherent in this patent describes the exemplary reduced thickness dimension cited by the Examiner as a percentage of a larger portion of the corresponding "blanket" and Applicants indicate that the thickness of the "blanket" is not provided.

It is noted that the Applicants are using the language "blanket" to refer to the laminate 10 of SWAN et al. The Examiner's interpretation of the reference equates the present "blanket" to the web 15 of SWAN and the present "facing material" to the thermoplastic film 14 of SWAN. Claim 4 requires that the flange to have a thickness less than about 15% of the thickness of the "blanket" (i.e. the web of SWAN). It is noted that the present "flange" is equated to the reduced thickness areas 17 of SWAN. The reference also provides the thickness of the film 14, which is preferably in the range of between about 20 microns (0.020 cm) and about 250 microns (0.250 cm). (Column 6, lines 6-9)

A set of values are presented for the percentage of the thickness of the reduced thickness areas of SWAN et al. based on the ranges of values taught by the reference. It is noted that all the values are less than about 15 percent of the thickness of the web ("blanket"), therefore the teachings of SWAN et al. read on claim 4.

Thickness of web (a)	15 cm	15 cm	0.5 cm	0.5 cm
Thickness of film (b)	0.020 cm	0.250 cm	0.020 cm	0.250 cm
Thickness of laminate (c) c= a + b	15.020 cm	15.250 cm	0.520 cm	0.750 cm
Thickness of reduced areas (d)	0.0508 cm	0.0508 cm	0.0508 cm	0.0508 cm
(d/c) * 100	0.34 %	0.33 %	9.76 %	6.7 %
(d/a) * 100	**0.34%**	**0.34%**	**10.16%**	**10.16%**

Even if Applicants' interpretation is considered, the percentage values considering the thickness of laminate including the web and the film, the values are less than about 15 percent for the ranges taught by the reference.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-9 and 15-18 rejected under 35 U.S.C. 102(b) as being anticipated by SWAN et al. (US 5,773,375).

SWAN et al. discloses an acoustical insulation web laminate designed for use in a motorized vehicle that comprises: a) a nonwoven acoustical insulation web 15 comprising thermoplastic melt-blown micro fibers, which is equated to the present "blanket" of fibers, and b) a second layer, which is equated to the present facing material, laminated to the acoustical insulation web to form the laminate, wherein portions of the acoustical insulation web and the

second layer can be thermally consolidated to form reduced thickness areas which are of a thin gauge relative to other portions of the laminate. (Column 3, lines 36-45) The reference also teaches that the lamination of film 14 to the web 15 composite can be done by using an adhesive. (Column 6, lines 29-32) SWAN et al. also teaches the use of binder fibers in the web. (Column 4, lines 31-34) Typical binder fibers include bicomponent binder fibers, which have an adhesive component, and a supporting component arranged in a coextensive side-by-side, concentric sheath-core or elliptical sheath-core configuration. The Examiner equates the adhesive component of the bicomponent binder fibers to the binder component polymer component of the present invention and the supporting component of the bicomponent binder fibers to the principal polymer component of the present invention. The melt-blown polypropylene fibers of SWAN et al. are equated to the primary fibers of the present invention. (Column 4, lines 31-56)

The reference further teaches that the thickness of the acoustical insulation web is in the range of about 0.5 cm to about 15 cm, preferably is at least about 2 cm, more preferably at least about 7 cm. (Column 5, lines 23-25) On Figure 4, the reference shows the laminate including a water barrier layer such as a planar thermoplastic film 14 formed of a relatively thin thermoplastic material such as polypropylene. (Column 5, lines 63-67 thru Column 6, lines 1-2). The thickness of the film 14 is in the range of between about 20 microns to about 250 microns. (Column 6, lines 6-9). The reference further teaches that the laminate 10 is typically pressure molded in a heated die to form reduced thickness areas 17 along its outer periphery 16, of approximately 508 microns (0.0508 cm) in thickness. The reduced thickness areas 17 promote the integrity of the laminate 10 in those areas and permit the laminate 10 to be easily handled by vehicle manufacturers during assembly operations. (Column 6, lines 35-47) The reduced

thickness areas 17 of the SWAN et al. reference are equated to the presently claimed densified perimeter flange.

With regards to claim 4, refer to the exemplary values presented by the Examiner in section 2 of the present office action, which show that the SWAN reference teaches the use of reduced thickness areas ("flanges") with a thickness less than about 15 percent of the thickness of the web ("blanket").

With regards to claims 6-7 and 16-17, SWAN et al. further teaches that the laminate 10 can include an optional scrim layer secured to the web opposite the film. The reference teaches that the optional scrim layer increases the integrity of the laminate. The reference further teaches that a second optional scrim layer can be secured between the film and the web. (Column 6, lines 14-34) Therefore, when the second optional scrim layer is secured between the film and the web, this embodiment will provide the claimed facing material comprising a scrim and a film.

With regards to claims 8 and 18, it is noted that SWAN et al. is silent with respect to the claimed static coefficients of friction. However, it is reasonable to presume that the claimed static coefficient of friction is inherent to the invention SWAN et al. Support for said presumption is found in the use of the same starting materials (i.e. includes meltable binder fibers in addition to melt-blown fibers in the acoustical web and a liquid barrier thermoplastic film), like processes of making the articles (i.e., pressure molding), and the production of similar end-products (i.e., acoustical insulation, etc...). The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594.

With regards to the binder component with a softening point lower than the softening of the principal component, it is noted that SWAN et al. teaches the use of a binder fiber with a

sheath-core structure having a core of crystalline polyethylene terephthalate surrounded by a sheath of an adhesive polymer formed from isophthalate and terephthalate esters. (Column 4, lines 53-56) It is well known that crystalline polymers have a higher melting point than adhesive components in a bicomponent fiber. By having a difference in melting point (or softening point) this type of bicomponent fibers can be used as binder or bonding fibers, therefore the difference in softening point is inherent to the bicomponent binder fibers taught by SWAN et al. This is further evidenced by CAREY, Jr. et al. (US 4,837,067) cited by the SWAN et al. on Column 4, lines 49-51. CAREY, Jr. et al. explicitly says that the adhesive component of thermally bonding fibers must be thermally activatable (i.e. meltable) at a temperature below the melt temperature of the structural fibers of a batt. CAREY, Jr. et al. also teaches the use of bicomponent bonding fibers with structures such as a sheath-core. (Column 4, lines 27-42)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 11 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over SWAN et al. (US 5,773,375) as applied to claims 1-9 and 15-18 above, and further in view of WEINLE et al. (US 4,840,832).

While SWAN et al. teaches the use of bicomponent binder fibers, it fails to teach the use of polyethylene terephthalate (PET) fibers as the primary fibers and the use of PET in the core and sheath of the bicomponent binder fibers.

WEINLE et al.'s invention is directed to an automobile headliner formed from a batt of polymeric fibers compressed and molded that imparts acoustical and thermal insulation. (Column 1, lines 5-14) The headliner is formed from a batt of polymeric fibers and the polymeric fibers preferably include potentially adhesive binder fibers. (Column 2, lines 9-10) The reference teaches the use of bicomponent fibers having a relatively low melting polymer binder component and a higher melting polymer strength component. (Column 2, lines 15-17) The reference teaches a sheath-core bicomponent construction wherein the core is formed of a relatively high melting polyethylene terephthalate polymer (PET) and the sheath comprises a PET co-polymer having a much lower melting temperature. (Column 4, lines 23-28) The polymer fibers, which comprise the batt, are formed of a thermoplastic polymer, such as polyethylene terephthalate (PET). (Column 4 lines 6-7)

Since both, SWAN et al. and WEINLE et al. are directed to acoustical insulation for vehicles, the purpose disclosed by WEINLE et al. would have been recognized in the pertinent art of SWAN et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the acoustical insulation of SWAN et al. and provide it with polyethylene terephthalate fibers to form the batt (or web) and bicomponent fibers with a core of PET and a sheath of PET with the motivation of providing an insulation material with a molded batt of fibers that remains highly deformable and resilient as disclosed by WEINLE et al. (Column 3, lines 56-68).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 571-272-1484. The examiner can normally be reached on Monday-Thursday 8:00-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0994.

Norca L. Torres-Velazquez
Examiner
Art Unit 1771

January 22, 2004